



# Factors Affecting the Difference in Gasoline Prices inside the Country and FOB Persian Gulf and Effect of this Difference on the Inequality Index of Atkinson's Coefficient in Iran

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## Abstract

As one of the most important policies adopted in Iran, the Law of Targeting Subsidies has goals and consequences that are essential for economic growth and development in the country. The purpose of this study is to measure the actualization of the price of an important energy carrier, such as gasoline, and also to measure the extent of the disappearance of class differences using a better index such as the Atkinson coefficient. In the upcoming study, the Autoregressive distributed lag method to provide more accurate results from a chapter has been used in the period of 2002-2022. The results show that among the three variables of the relative price of gasoline (the ratio of the nominal price of gasoline to the price of other goods and services), the exchange rate and per capita consumption, the two factors of the relative price of gasoline inside the country and the exchange rate are the most explanatory on the price difference of gasoline. In the FOB of the Persian Gulf, it has increased the Atkinson index, which means an increase in income inequality. While the increase in GDP per capita improves the inequality situation in the society and the increase in inflation worsens the inequality situation. In the estimation of the research model, no significant effect of the real wage variable on inequality was observed, and the positive effect of increasing real government spending on reducing inequality was not confirmed in the study period.

**Keywords:** Gasoline Price, Iran, FOB Persian Gulf Gasoline Price, Inequality Index, Atkinson Coefficient, Auto Regression with Distributed Lag (ARDL).

**JEL Classification:** E54, Q32, E58.

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## 1. Introduction

The aim of this paper is surveying effect of energy carriers price such as gasoline and its effect on inequality. We use from seasonal data and ARDL method. Three hypothesis are as below:

- 1) Increase of gasoline price is caused to decline of difference between FOB price and inter price.
- 2) Exchange rate is so effective on price difference.
- 3) Increase of gasoline price difference is caused to improve of inequality.

Results of this paper is same of some studies such as Shirafkan and Mohammadi, Zoo and Valentine (2020).

As results of this paper, we can say the relative gasoline price in country is effective factor of difference price. Therefore nominal gasoline price should be revised according to economic condition increase of production with control of inflation is so important in decrease of inequality.

## 2. Theoretical framework

In the upcoming article, the influencing factors on the price difference of gasoline inside the country and FOB Persian Gulf, as well as the effect of this price difference on the inequality index of Atkinson's coefficient in Iran will be discussed, and seasonal data will be used to provide more accurate results. For this purpose, these effects will be investigated using two equations. In the first equation, the dependent variable of gasoline price difference within the country and FOB Persian Gulf (GAP) and the explanatory variables of exchange rate (EXR), domestic gasoline price (PGD) and FOB Persian Gulf gasoline price (PGF) are used. In the second model, GAPR is the dependent variable and indicates the difference in the price of gasoline inside the country and FOB Persian Gulf at a fixed price. The union relationship of gasoline price difference shows that the two factors of internal price of gasoline and exchange rate are effective factors in calculating (GAP).

It is reminded that although the price of gasoline is determined by order in Iran's economy. However, past evidence shows that the government has forcibly increased the price of gasoline under certain economic conditions. Among these conditions, we can mention the performance of the relative price index of gasoline, which is calculated as the ratio of the price of domestic gasoline to the price of other goods and services.

The sharp decrease of this index due to the increase in domestic inflation provides the basis for an orderly increase in the nominal price of gasoline, which leads to a decrease in the price difference, so the expected sign of this index in the first pattern is a positive sign. Another important factor in creating the basis for changing the price of gasoline by the government is the state of gasoline consumption per capita as well as the performance of domestic gasoline production, which has sometimes

turned the country's economy into a gasoline importer in the past.

### 3. Methodology

As one of the most important policies adopted in Iran, the Law of Targeting Subsidies has goals and consequences that are essential for economic growth and development in the country. The purpose of this study is to measure the actualization of the price of an important energy carrier, such as gasoline, and also to measure the extent of the disappearance of differences using a better index such as the Atkinson coefficient. The autoregressive distributed lag method is used for the period of 2002-2022.

### 4. Discussion

It is expected that the increase in per capita consumption of gasoline, in the conditions of the country's currency restrictions, will lead to an increase in the domestic price of gasoline and thus reduce the price difference of gasoline. Therefore, the expected sign of this variable in the first model is negative. The third factor that plays a role in aggravating the gasoline price difference is the exchange rate, which is expected to have a positive sign in the pattern with other factors being constant.

### 5. Conclusion and Suggestion

One the main decisions in Iran, is the law of targeting subsidies. In this paper the actualization of the price of an important energy carriers such as gasoline is applied and measure the extent of disappearance of class differences using a better index such as Atkinson coefficient.

Results show that among the variables of relative price of gasoline and exchange rate, exchange rate is the most explanatory on the price difference of gasoline. If FOB Persia golf price increases, the Atkinson index increases. When GDP per capita improves, the inequality is increases.

The results show that among the three variables of the relative price of gasoline (the ratio of the nominal price of gasoline to the price of other goods and services), the exchange rate and per capita consumption, the two factors of the relative price of gasoline inside the country and the exchange rate are the most explanatory on the price difference of gasoline. In the FOB of the Persian Gulf, it has increased the Atkinson index, which means an increase in income inequality. While the increase in GDP per capita improves the inequality situation in the society and the increase in inflation reduces the inequality situation. In the estimation of the research model, no significant effect of the real wage variable on inequality was observed, and the positive effect of increasing real government spending on reducing inequality was not confirmed in the study period.

As results, we can suggest that relative price of petroleum is determinate factor of price difference. In the first part, we should control internal inflation which has

important role in stability of exchange rate. Because increase of exchange rate has important effect on price difference. In other side, nominal petroleum price can be adjusted. Rising of production with control of inflation is so important in decrease of income inequality.

## **6. Ethical Considerations**

### **6.1. Compliance with ethical guidelines**

The present study has followed the scientific principles of research.

### **6.2. Funding**

This paper is an extract from a master thesis of Yeganeh Jahatigh under supervision of Dr. Vida Varahrami.

### **6.3. Author's Contribution**

This paper is an extract from a master thesis.

### **6.4. Conflict of Interest**

The authors declare o conflict of interest.